

WHAT IS CLAIMED IS:

1. A pole vibration damping assembly mountable on a pole for damping wind induced pole vibration comprising an inner partial cylindrical sleeve having an inner sleeve axis defining the center of curvature of the inner sleeve with the inner partial cylindrical sleeve being dimensioned and shaped to fit in a mating manner over an upper end portion of a cylindrical pole having an axis defining the center of curvature of the cylindrical pole, an outer partial cylindrical sleeve having an outer sleeve axis defining a center of curvature of the outer sleeve that is coextensive with the inner sleeve axis, a floor panel extending between lower portions of the inner sleeve and the outer sleeve extending over upper portions of the inner sleeve and the outer sleeve, a plurality of partitioning panels extending vertically upwardly from the floor panel and connected to the inner sleeve and the outer sleeve to define damping weight receiving chambers between adjacent partitioning panels and a freely movable damping weight provided in each of the damping weight receiving chambers.
2. A pole damping assembly as recited in claim 1, wherein the damping weights are spherical balls.
3. A pole damping assembly as recited in claim 1, wherein the damping weights are spherical metal balls.
4. A pole damping assembly as recited in claim 1, wherein the damping weights are spherical lead balls.

5. A pole damping assembly as recited in claim 1, wherein the inner sleeve and the outer sleeve are of cylindrical configuration.
6. A pole damping assembly as recited in claim 1, wherein the inner sleeve and the outer sleeve are of cylindrical configuration and the damping weights are spherical lead balls.
7. A pole damping assembly as recited in claim 1, wherein the partitioning structures are planar panels.
8. A pole damping assembly as recited in claim 1, wherein the partitioning structures are planar panels oriented in substantially perpendicular manner relative to the floor panel.
9. A pole damping assembly as recited in claim 8, wherein the inner sleeve and the outer sleeve are of cylindrical configuration and the planar panels are chordally oriented with respect to the inner sleeve and the outer sleeve.
10. A pole damping assembly as recited in claim 9, wherein the inner and outer sleeves and the planar panels are formed of aluminum.
11. A pole damping assembly as recited in claim 1, wherein the damping weights are plastic coated spherical balls.
12. A pole damping assembly as recited in claim 1, wherein the damping weights are spherical metal balls that are coated with polyurethane.

13. A pole damping assembly as recited in claim 1, wherein the damping assembly is formed of first and second housing component half-portions that are fixedly connected together to cooperatively define the inner sleeve, the outer sleeve and the floor panel with each housing component half-portion including two internal partitions and two end portions which respectively define opposite ends of each respective half-portion.
14. A pole damping assembly as recited in claim 13, wherein the inner sleeve and the outer sleeve are of cylindrical configuration.
15. A pole damping assembly as recited in claim 14, wherein the damping weights are spherical metal balls.
16. A pole damping assembly as recited in claim 14, wherein the damping weights are spherical lead balls.
17. A pole damping assembly as recited in claim 13, wherein each of said half-portions is formed of cast metal.
18. A pole damping assembly as recited in claim 17, wherein the cast metal is aluminum.

19. A method of damping wind induced first harmonic mode vibrations of an elongated vertically oriented pole having an axis comprising the steps of providing a plurality of movable spherical weights supported on a support surface radially extending outward of a surface of the pole at or near the upper end of the pole so that each of the spherical weights can roll over a discrete portion of the support surface while simultaneously retaining each spherical weight from contact with other spherical weights by barriers positioned to separate the discrete portions of the support surface so that rolling contact of the spherical weights with the barriers dampens wind induced first harmonic mode vibrations.
20. The method of claim 19, wherein the movable spherical weights are lead spheres.
21. The method of claim 20, wherein the lead spheres are coated with polyurethane.
22. The method of claim 20, wherein the plurality of movable spherical weights are supported at or near the upper end of the pole.
23. The method of damping first harmonic mode wind induced vibrations as recited in claim 22 including the further steps of providing a second vibration damper at or near the middle portion of the pole for damping second mode harmonic pole vibration.
24. The method of claim 23, wherein the movable spherical weights are lead spheres.
25. The method of claim 21, wherein the lead spheres are coated with polyurethane.
26. The method of claim 25, wherein the barriers are metal panels.

27. A pole assembly comprising a vertically extending tubular pole have a pole axis vibration damping assembly, a first harmonic mode vibration damping assembly comprising an inner sleeve matingly fitted over an upper portion of the pole and having an axis coextensive with the pole axis, an outer sleeve having an outer sleeve axis defining a center of curvature of the outer sleeve that is coextensive with the inner sleeve axis, a floor panel extending between lower portions of the inner sleeve and the outer sleeve, a top panel extending between upper portions of the inner sleeve and the outer sleeve, a plurality of partitioning structures extending between the inner sleeve and the outer sleeve to define damping weight receiving chambers between adjacent partitioning structures and freely movable damping weights provided in each of the damping weight receiving chambers.
28. A pole assembly as recited in claim 27, wherein the damping weights are spherical balls formed of lead.
29. A pole damping assembly as recited in claim 27, wherein the inner sleeve and the outer sleeve are of cylindrical configuration.
30. A pole damping assembly as recited in claim 27 additionally including a second damping assembly mounted approximately midway between the lower and upper ends of the pole for damping second mode harmonic vibrations.

31. The pole assembly of claim 27 additionally including a second vibration damping assembly matingly mounted on the pole at a location spaced from and below the primary damping assembly and wherein the second vibration damping assembly operates to dampen second mode harmonic vibrations.
32. A pole assembly including a vertically oriented pole, an upper vibration damping assembly mounted in a top portion of the pole and being operable for damping first mode harmonic vibrations and a lower vibration damping assembly mounted below the upper vibration damping assembly in a mid-portion of the pole and being operable for damping second mode harmonic vibration.